

USSR

ROGAVA, S. Ye., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 10, Apr 71, Author's Certificate No 298073

element to the input of the half-adder. The outputs of the AND elements of the main ripple-through carry net are connected through a delay element and OR element to the second input of the half-adder.

2/2

- 86 -

USSR

UDC: 621.317.725

MICHIAURI, A. A., MANUKYAN, Yu. S., SOGELIANI, H. Kh., Tbilisi Affiliate of the All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleev

"A Device for Determining the Amplitude of Harmonic Signals of Low and Very Low Frequencies"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, 1970, Author's Certificate No 206936, filed 14 Aug 68, p 64

Abstract: This Author's Certificate introduces a device for determining the amplitude of harmonic signals of low and very low frequencies. The unit contains an analog-to-code converter with a pulse distributor connected to its synchronization input. As a distinguishing feature of the patent, the measurement time is kept independent of the period of the signal being studied by using a computing module in the device with the analog-to-code converter connected to one of its inputs, and the pulse distributor connected to the other.

1/1

USSR

MANUKYAN, Zh. K.

"Actual Division and Negation (using Armenian Language Materials)"

Nauch.-Tekhn. Inform. Sb. Vses. In-t. Nauch. i Tekhn. Inform. [Scientific and Technical Information, Collection of the All-Union Institute for Scientific and Technical Information], 1972, Series 2, No 9, pp 45-52 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V752 by V. Gushchin).

Translation: The purpose of this work is to describe the transformation of negation under the assumptions of natural languages upon transition from the deep (semantic) structure to the superficial (expressive) structure. It is concluded that it is necessary to determine the deep structure of a statement. For this purpose, the author turns to the concept of actual division (separation of elementary semantic predications and establishment of their hierarchy for a given statement).

The semantics of actual division are described and means of its expression are investigated using Armenian language materials. The solution of the problem stated in terms of actual division is reduced to determination of the primary predicate, expressing the semantic content of the statement. Then negation in the superficial structure of the statement is related to the main predicate.

1/1

Acc. Nr.

AP0034231

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code

UR 0078

74283c Products of the reaction of hexamethylenetetramine with cyanates, thiocyanates, and selenocyanates of some metals. Tsintsadze, G. V.; Mamulashvili, A. M.; Denichenko, L. F. (Gruz. Politekh. Inst., Tbilisi, USSR). Zh. Neorg. Khim. 1976, 15(1), 276-8 (Russ). The ir absorption frequencies of XCN (X = O, S, or Se) and CN groups of products of reaction of XCN salts of Mn, Co, Ni, Fe, Zn, Cd with hexamethylenetetramine (I) are given. The compds. were also studied by x-ray powder diffraction. Selenocyanates and thiocyanates of Mn, Fe, Co, and Zn form isostructural complexes with I. Metal ions of these complexes are octahedrally coordinated (4H₂O and 2KCN). Cd complexes have bridging SCN and SeCN groups. Complexes of Mn, Co, and Ni cyanates are isostructural and have 1 coordinated in the inner sphere. HMTP

REEL/FRAME

19710884

Instruments and Measurements

USSR

UDC 681.888.212

MANULIS, B.M., TEYTEL'MAN, A.V., MANULIS, M.N.

"Digital Depth Indicator"

USSR Author's Certificate No 255081, filed 2 July 68, published 12 Mar 70 (from RZh--Elektronika i yeye primeneniye, No 3, March 71, Abstract No 3A433A)

Translation: A precise and interference-free digital depth indicator (DDI) is proposed. The DDI is provided with a unit for quenching a digital signal panel, which is connected between the second output of the control trigger and the input of the decoder. The exclusion unit of the DDI is fulfilled in the form of a trigger, the input of which is connected with a triggering [zapusk] unit and with the output of the timer and the AND circuit. The input of the AND circuit is connected to the exclusion trigger and the unit for distribution of the echo signal, and its output to the control trigger. Introduction into the circuit of the DDI of the unit for quenching a signal panel assures its quenching during measurement of depth. The exclusion unit eliminates presentation of false responses. A block diagram of the device and a detailed description of its operation are presented. The device can find an application in sonic depth finders. 1 ill. N.B.

1/1

Instruments and Measurements

USSR

UDC 681.888.212

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Translation: A precise and interference-free digital depth indicator (DDI) is proposed. The DDI is provided with a unit for quenching a digital signal panel, which is connected between the second output of the control trigger and the input of the decoder. The exclusion unit of the DDI is fulfilled in the form of a trigger, the input of which is connected with a triggering [zapusk] unit and with the output of the timer and the AND circuit. The input of the AND circuit is connected to the exclusion trigger and the unit for distribution of the echo signal, and its output to the control trigger. Introduction into the circuit of the DDI of the unit for quenching a signal panel assures its quenching during measurement of depth. The exclusion unit eliminates presentation of false responses. A block diagram of the device and a detailed description of its operation are presented. The device can find an application in sonic depth finders. 1 ill. N.B.

1/1

Acc. Nr:

AP0049129

Abstracting Service:

CHEMICAL ABST. 5-28

Ref. Code:

480079

100842f Synthesis and characteristics of new mixed organotin compounds containing allcyclic radicals. Rubinchik, G. F.; Manulkin, Z. M. (USSR). *Zh. Obshch. Khim.* 1970, 40(1), 136-40 (Russ). To EtMgI, from 3.15 g Mg in Et₂O, was added 14.41 g (C₆H₁₁)₂SnBr₂ and the mixt. kept 2 hr on a steam bath to give 81% (C₆H₁₁)₂SnEt₂ (I), b_p 155-6°, d₄²⁰ 1.1950, n_D²⁰ 1.5190. Similarly were prepd.: 43% dimeric (C₆H₁₁)₂Sn(CH₂CH:CH₂)₂, m. 274-5°; 81% (C₆H₁₁)₂SnPh₂ (II), m. 118-19°; 61% (p-Me-C₆H₄)₂Sn(C₆H₁₁)₂, b_p 259-60°, n_D²⁰ 1.5850; 44.1% (C₆H₁₁)₂Sn(C₆H₄CH₂CH:CH₂)₂, b_p 245-60°, d₄²⁰ 1.2010, n_D²⁰ 1.5760; 70.3% (C₆H₁₁)₂Sn(C₆H₄OMe-p)₂, b_p 162°; 65.3% (C₆H₁₁)₂Sn(C₆H₄OEt-p)₂, m. 170-1°, b_p 169-70°; 32% (C₆H₁₁)₂Sn(C₆H₄Br-p)₂ (analyzed but undescribed otherwise); 44.4% (C₆H₁₁)₂SnC₆H₄-C₆H₁₁-p, m. 75°, b_p 227-8°; 35% (C₆H₁₁)₂SnC₆H₄OPh-p, m. 239-40°. Reaction of 4.48 g I with 2.09 g Br in Et₂O gave 70% cyclohexyl bromide, C₆H₁₁SnEt₂Br, and (C₆H₁₁)₂SnEtBr; others underwent a similar random bromination. I and iodine in refluxing CHCl₃ 2 hr gave 60% cyclohexyl iodide, some C₆H₁₁SnEt₂I, and more (C₆H₁₁)₂SnEtI, while II and iodine in CHCl₃ gave 87% PhI and some PhSn(C₆H₁₁)₂I. C₆H₁₁SnEt₂Br b_p 124-3°, d₄²⁰ 1.5340, n_D²⁰ 1.5435; (C₆H₁₁)₂SnEtBr b_p 175-6°, 1.4680, 1.5508; (C₆H₁₁)₂SnPhBr m. 58-9°, b_p 227-8°; C₆H₁₁SnEtI, b_p 151-2°, 1.5250, 1.5665; (C₆H₁₁)₂SnEtI, b_p 191-2°, 1.5960, 1.5750; (C₆H₁₁)₂SnPhI, b_p 250-1°, 1.6190, 1.6160.

G. M. Kosolapoff

REEL/FRAME
19800935

7de

USSR

UDC 621.438-71:536.2

MANUSHIN, E. A.

Vysokotemperaturnye Ozhlazhdayemyye Gas. Turbiny - Sb. [High-temperature Cooled Gas Turbines - Collection], Moscow, Mashinostroyeniye, 1971, pp 142-182 (from Referativnyi Zhurnal, Turbostroyeniye, No 49. Single Issue No 2, 1972, Abstract No 2.49.93)

Translation : Problems of material selection for main details of high-temperature cooled gas turbines and the cooling schemata and also design determinations of main cooled units and details are investigated. The advantages of the air cooling system and special design features of open, closed, and half-closed cooling systems are reported. The most widespread design variants of cooling schemata with longitudinal and lateral cooling air flow in the blade are analysed. A qualitative comparison by effectiveness and technology of different methods of air and liquid cooling is presented. Achievements in the field of developing a combined air

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USSR

MANUSHIN, E. A., Vysokotemperaturnye Oshlazhdayemyye Gas. Turbiny-Sb, 1971,
pp 142-182

cooling (particularly porous) are elucidated and their comparative is indicated. Principal features in designing turbine blades with combined liquid and outer (jet) liquid cooling are presented. Cooling problems of high-temperature turbine body and rotor elements are also touched. Twenty eight illustr., 25 biblio. refs.

2/2

- 132 -

Power, Turbine, Engine, Pump

UDC: 621.438.71.001.5

USSR

MANUSH N, E. A., MIKHAL'TSEV, V. Ye., PUGIN, G. A., SOSNOV, Yu. V.

"An Experimental Turbine for a Gas Temperature of 1200°C With Two-Loop Air-Liquid Cooling"

Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana (Works of the Moscow Higher Technical Academy imeni N. E. Bauman), 1970, No 134, pp 133-140 (from RZh-Turbostroyeniye, No 8, Aug 70, Abstract No 8.49.72)

Translation: On the basis of research at the Moscow Higher Technical Academy, the Leningrad "Ekonomayzer" Plant made an experimental semi-industrial pilot model of a high-temperature gas-turbine installation with air-liquid cooling of the working blades. In order to finish the cooling system, an experimental gas turbine was designed at the Moscow Higher Technical Academy, the full-scale dimensions of the blading being taken from the dimensions of the first stage of the cooled turbine in the high-temperature gas-turbine installation. A description is given of the stand and debugging tests of the experimental high-temperature gas-turbine installation at 4500-9000 rpm. An analysis of the thermal state of the guide vanes showed that the air cooling system, in reducing the vane temperature by 150-200°C, provides satisfactory cooling at temperature of up to 960°C. Six illustrations, one table, bibliography of three titles. L. P. D.
1/1

"USSR"

UDC: 621.438.253.5-71.001.5

IVANOV, V. L., MANUSHIN, E. I., MICHAL'TSEV, V. YE.

"Investigation of the Air-Liquid Cooling of Rotor Blades"

Moscow, Vysokotemperaturnye Okhlezhdayemyye Gaz. Turbiny -- Sbornik (High-Temperature Cooled Gas Turbines -- Collection of Works), Mashinostroyeniye, 1971, pp 70-85 (from Referativnyy Zhurnal, Turbostroyeniye, No 1, Jan 72, Abstract No 1.49.105)

Translation: Results are given of cooling system and turbine rotor designs as part of the development of a multistage turbine for a gas temperature on the order of 1450-1500°K. A three-stage variant of a cooled high-temperature turbine was selected. For determining the thermal fluxes in the cooling system, the average surface temperature of the nozzle blade was assumed to be 1073° K. and that of the working blades was assumed to be 873° K. With these parameters heat removal of the cooling system was 3.44 times 10⁴ joules/kg; for this, a total air intake of 9% into the cooling system, or a nonreturnable air intake of 5% behind the compressor, was required. The nozzle blades are internally air-cooled; the blades are hollow, with inserted deflectors. In the selection of the design variant of the rotor, preference was given to a rotor without covering disks. The cooling air is delivered into an annular cavity in the 1/4

USSR-

IVANOV, V. L., et al., Vysokotemperaturnye Okhlazhdayemyye Gaz. Turbiny --
Sbornik, Mashinostroyeniye, 1971, pp 70-85

disk, and further on into the radiators. The radiator is two-sided, it is made for two-way air passage on each side. The air is delivered to each working blade through openings in the disk into the first half of the radial ribs of the radiator, passes along the inter-rib channels, then changes the direction of its movement by 180° and flows along the second part of the ribbed surface. The air is led out into the flow-through part behind the first-stage disk or into the flow-through part of the turbine. The parameters and dimensions of an experimental single-stage turbine were determined by means of calculations of the first stage of a three-stage experimental turbine. The basic dimensions of the stage and the circumferential velocities are the same in the full-scale stage and in the model stage. The model stage was designed for two kinematically similar regimes, which correspond to a pressure before the stage of 2.6×10^5 newtons/m² and 3.92×10^5 newtons/m². Here the flow of air in the crosssection before the combustion chamber comprises, respectively, 3.0 and 5.5 kg/sec when the turbine is operating with counterpressure. When the counterpressure on the model turbine is decreased to the atmospheric value, the pressure before the turbine is stabilized at (1.4-1.5) $\times 10^5$ newtons/m² and the gas flow comprises approximately 2 kg/sec. The average surface

- 137 -

USSR.

IVANOV, V. L., et al., Vysokotemperaturnye Okhlazhdayemye Gaz. Turbiny -- Sbornik, Mashinostroyeniye, 1971, pp 70-85

temperatures of the nozzle blades and those of the working blades in the model turbine and in the full-scale turbine are identical. Cooling is of the two-circuit, air, liquid type. Six dead-end channels are situated in the blade fin for cooling it. The heat carrier is sodium metal. A procedure for filling and molding the blade cavities with sodium has been worked out. During experimental investigations of the turbine, the temperatures of the basic parts were measured by means of thermocouples, the gas parameters were determined in two-dimensional bands, before and after the turbine stage. The temperature, the total pressure and the static pressure, and the direction of the stream were measured. The turbine power was measured on the basis of the power of a hydraulic brake, and as a control, on the basis of gas parameters. The consumption, temperature, and pressure of the cooling air were measured at the entry and exit in each cooling channel. The braking temperature of the gas at the rotor blade was calculated on the basis of the stage parameters. In order to establish more precisely the heat-removal facilities to the turbine housing, an investigation was made to determine the rules governing heat exchange at this sector. The results of the investigation are generalized by the criteria

3/4

USSR.

IVANOV, V. L., et al., Vysokotemperaturnye Okhlazhdayemyye Gaz. Turbiny -- Sbornik, Mashinostroyeniye, 1971, pp 70-85

relationship $\eta_u = A(0.606 \times 10^{-5} R_g)^{3.4} U/C_{ag}$. Results of experiments at three operating regimes are presented; at gas temperatures before the turbine equal to 1224, 1229, and 1237° K and temperature field of the external surface of the working blades along the profile of the middle cross section. In the preparation of the experiment with the turbine outlet for a calculated temperature of 1473° K, particular attention was devoted to fitting the blade radiators to the recesses in the disk, and tightening the point of contact of the radiators and the disk. Eight figures, one table.

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- 139 -

AP0043766

Abstracting Service:
CHEMICAL ABST. J-70

Ref. Code:

UR 0191

M

101291n Effect of the molecular-weight distribution of sus-
pension poly(vinyl chloride) on the technological properties of
rigid compositions. Manushin, N. I.; Balashova, T. S.; Barano-
va, L. G.; Isakova, V. A.; Zhikharevich, L. B. (USSR). Plast.
Massy 1970, (1), 26-9 (Russ). The effects of the mol. wt. distri-
bution of suspension poly(vinyl chloride) (I) (3 imported and 2
Soviet brands) on its extrudability were studied. The processabil-
ity of rigid I compns. was evaluated from the melt index and
the behavior of I during processing. Differential mol. wt. distri-
bution curves indicated that I processability could not be proper-
ly evaluated from Finketscher const., but also required an evalua-
tion of mol. wt. distribution. Fractional compn. of I and its sta-
tistical distribution width indicated a relation between the melt
index and the heterogeneity factor (U) characterizing the statisti-
cal distribution width of I. Two regression equations were de-
rived by statistical treatment of U and the melt index. The
equations indicated that I extrudability could be quant. evalu-
ated from U .

CKJR

26.

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REEL/FRAME
19801684

USSR

UDC: 621.311:681.142.2

KIZHNER, S. I., ~~MANUSOV, V. Z.~~, SIDORKIN, Yu. M., Novosibirsk Electrical Engineering Institute

"An ALGOL Program for Calculating the Steady-State Conditions of Electric Systems by the Method of Loop Currents"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, vyp. 3, No 13(193), Oct 71, pp 96-101

Abstract: Steady-state conditions in electric systems are calculated by splitting up the closed system into loops where the current divides. An algorithm is proposed for handling the problem on a digital computer using ODRA-ALGOL and ALPHA algorithmic languages for the description. The solution algorithm is presented in matrix form, and a block diagram of the program for calculation is given. A modified program can handle analysis of up to a total of 150 loops and junctions on the ODRA digital computer in 10-15 minutes.

Powder Metallurgy

USSR

M

UDC 621.741.011.9.02.5

POYARKOV, V. G., MANUYEV, S. V., and TRASHKOV, V. V.

"Flammability of Powders of Binary Alloys of Aluminum With Silicon in the Aerosol State"

Kiev, Poroshkovaya Metallurgiya, No. 7, Jul 70, pp 96-100.

Abstract: Despite the wide acceptance of aluminum-silicon alloys in liquid state and powdered metal parts in major industries, little if any is known of the flammability of aluminum-silicon alloys. This paper concerns the characteristics of flammability of binary alloys of the aluminum-silicon system. The self-combustion temperature of the specimen, i.e., the temperature which disturbs the thermal equilibrium of the system and starts the spontaneous burn-up of the substance, is taken as the characteristic of flammability. The self-combustion temperature of powder of binary aluminum-silicon alloys varies with their composition and increases from 447 to 640° C with an increase of silicon from 2.3 to 9.0%. The lowest self-combustion temperature of binary aluminum-silicon alloys is 447° C for alloys with 2.3% silicon. At 12% silicon and higher, the alloy's melting temperature sharply rises. Alloys containing 10% Si did not ignite when specimens were heated to 1000° C. The self-combustion (SC) temperature of powders was also studied as a function of dispersity. The

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USSR

POYARKOV, V. G., et al, Poroshkovaya Metallurgiya, No 7, Jul 70, p. 80-100

SC temperature of this alloy within the disparity of 0-50 to 3.5 silicon varies within 575 to 742° C. A decrease in particle size lowers the SC temperatures due to the greater specific surface and lower oxidation activation energy. From 30 to 60 tests were carried out for each specimen to determine the lower oxidation concentration limit (LOCL) of aerosols. The alloy with 1.33% Si appears to have the lowest LOCL value; its self-combustion temperature is also lower. The flame temperature of aerosols of aluminum-silicon temperatures decrease with an increase in silicon in them.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ELECTRON MICROSCOPIC DATA ON THE STRUCTURE OF FILMS FROM MIXTURES
OF LATICES -U-
AUTHOR--(03)--VERKHOLANTSEV, V.V., CHERNYKH, V.D., MANUYLOV, A.I.
COUNTRY OF INFO--USSR
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 347-349
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ELECTRON MICROSCOPY, LATEX, PLASTIC FILM, POLYSTYRENE RESIN,
POLYVINYL CHLORIDE, BUTADIENE STYRENE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1598 STEP NO--UR/0069/70/032/003/0347/0349
CIRC ACCESSION NO--AP0125220
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125220

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE STRUCTURE OF FILMS FORMED UPON DRYING OF DILUTED BINARY MIXTURES OF POLYVINYL CHLORIDE, STYRENE AND BUTADIENE STYRENE COPOLYMER LATICES HAS BEEN STUDIED BY ELECTRON MICROSCOPY.

FACILITY: LENINGRADSKIY TEKHNOLGICHESKIY INSTITUT.

UNCLASSIFIED

USSR

UDC 612.18

MANUYLOV, I. A., Laboratory of Regulation of Circulation, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, and Chair of Physiology, Institute of Physical Culture, Omsk

"Mechanism of the Constrictive Effect of Heated Blood on the Arteries"

Leningrad, Fiziologicheskii Zhurnal SSN imeni I. M. Sechenov, No 5, 1970, pp 742-750

Abstract: Warming arterial blood to 2° to 2.5°C above the rectal temperature constricted the arteries in the hind legs, small intestine, and spleen of dogs. The effect was most pronounced in the extremities. Neither denervation of the extremities or intestinal loops, nor dihydroergotamine block of the vascular alpha-adrenoreceptors prevented the vessels from constricting, suggesting that the reaction is myogenic. Thermal vasoconstriction appears to be a local mechanism for regulating blood circulation. Under conditions of intense muscular exertion resulting in elevated blood temperature, the effect of the blood on the vessels of organs in a state of relative rest may be linked to the general mechanism of compensatory constriction.

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1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ON THE MECHANISM OF CONSTRICTORY EFFECT OF THE HIGH TEMPERATURE
BLOOD ON THE ARTERIES -U-
AUTHOR--MANUYLOV, I.A.
COUNTRY OF INFO--USSR
SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56,
NR 5, PP 742-750
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BLOOD TRANSFUSION, BODY TEMPERATURE, SMALL INTESTINE, SPLEEN,
ERGOT, BLOOD CIRCULATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/1168 STEP NO--UR/0239/70/056/005/0742/0750
CIRC ACCESSION NO--AP0126770
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0126770

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PERFUSION OF THE LIMBS, SMALL INTESTINE AND SPLEEN OF AN ANIMAL WITH BLOOD OF 2.0-2.5 DEGREES C HIGHER TEMPERATURE THAN RECTAL WAS ACCOMPANIED BY LOCAL CONSTRICTORY REACTION PRODUCING NO REMOTE REFLEX RESPONSES AND PERSISTING AFTER DENERVATION OF THE ORGANS. DIHYDROERGOTOXIN BLOCKADE OF VASCULAR, ALPHA ADRENORECEPTORS DOES NOT PREVENT THE HEAT CONSTRICTION OF THE VESSELS WHICH SUPPOSES THIS REACTION TO BE A MYOGENIC ONE. PHYSIOLOGICAL SIGNIFICANCE OF THE HEAT VASO, CONSTRICTION IS SUPPOSED TO BE ONE OF THE LOCAL MECHANISMS OF THE REGULATION OF BLOOD CIRCULATION PARTICIPATING IN THE COMPENSATOR VASCULAR CONSTRICTION DURING INTENSE MUSCULAR ACTIVITY.

FACILITY: LAB OF REGULATION OF THE BLOOD CIRCULATION, I. P.

PAVLOV'S INSTITUTE OF PHYSIOLOGY ACADEMY OF SCI, USSR, LENINGRAD.

FACILITY: DEPT. OF PHYSIOLOGY, PHYSICAL CULTURE INSTITUTE, OMSK.

UNCLASSIFIED

USSR

UDC 621.791.052.4.011:620.192.4:669.14.018.44

LAPTEV, A. A., LYUBALIN, P. M. (Candidates of Techn. Sciences), BELOTELOV, I. N., KULIKOV, F. R., and MANUYLOV, N. N. (Engineers)

"Certain Strength Characteristics of Weld Joints From VNS2 and VNS5 High-Strength Stainless Steels"

Moscow, Svarochnoye proizvodstvo, No 6, June 72, pp 29-31.

Abstract: Argon-arc welding is widely used for welding structures from VNS2 and VNS5 high-strength stainless steels. It is not always possible, however, to heat-treat these structures after welding. Repeated heating in back runs may, therefore, affect the joint strength. The objective of this study was to rate the reliability of repaired structures in order to develop an efficient repair welding technology. Auxiliary welding without subsequent heat treating of argon-arc-welded butt joints from VNS5 steel markedly decreases their static strength. Welds from VNS2 steel are not affected to such an extent by auxiliary welding. Back runs of argon arc-welded butt joints from VNS2 steel substantially increase their susceptibility to cracking in blow-bending tests; this was not observed in joints from VNS5 steel. Surface plastic strain hardening of weld joints and weld-affected areas markedly increases the static strength of argon-arc

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USSR

LAPTEV, A. A., et al., Svarochnoye proizvodstvo, No 6, June 72, pp 29-31
welded joints from VNS2 and VNS5 steels and their combinations. Hardening
fully compensates for the drop in static strength caused by auxiliary
welding. Hardening hardly affects the susceptibility of weld joints to
cracking in blow-bending tests with the exception of weld joints made from
VNS2 + VNS5 steels. (2 illustrations, 3 tables)

2/2

- 70 -

USSR

UDC 621.791.754.293.669.295

POLYAKOV, D. A., Candidate of Technical Sciences, and MANUYLOV,
N. N., Engineer

"Argon-Arc Welding of VT5-L Alloy and VT5-L With OT4 and OT4-1
Alloys"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 70, pp 12-13

Abstract: Experiments were performed using flat specimens 4, 10, and 25 mm thick with welding plates made of cast plates 12 and 30 mm thick by mechanical working on both sides to the required thickness. Type VT5-L cast titanium alloy, plus a combination of this alloy with OT4 and OT4-1 deformable alloys, can be joined by manual or automatic Argon-arc welding without a filler or with a filler of technical titanium or Ti + (2-3)% Al. The filler is selected on the basis of the metal thickness and required mechanical properties of the joints. Welded joints of all thicknesses have good plasticity and impact toughness and low sensitivity to stress concentrators. The fatigue limit and strength with repeated static loading of 1/2

USSR

POLYAKOV, D. A., et al., Svarochnoye Proizvodstvo, No 11, Nov 70, pp 12-13

welded joints is no lower than for cast VT5-L. Annealing causes no significant changes of the mechanical properties or structure of the welded joints.

2/2

AA0053084- *MANUKOV, N.N.*

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 5-70

244004

CONSTANT PRESSURE REGULATOR. The con-
trol of constant oil pressure in the

forced lubrication system of an internal combustion engine is achieved by coupling the thermostat 2 in feed pipe 1 through rod 3 to box valve unit 6 and coupling the shaft of the valve 9 to the metering rod 12 of the oil supply pump 13. Thus the pressure in pipe 5 regulates the output of the pump to feed pipe 1 and controls the pressure to pipe 4 and to the crankshaft bearings.

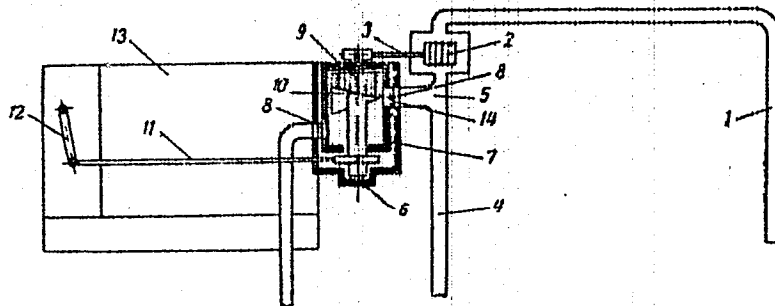
15.2.68 as 1218062/24-6 O.B. LEONOV et al. M.E.
Bayman, Moscow, Technical College (3.10.69) Bul.
17/14.5.69. Class 46c, Int. Cl. F 01m.

1/2

19821982

AA0053084

Leonov, O.B.; Borovitskiy, V.I.; Arapov, V.V.; Manuylov, N.N.;
Patrakhal'tsev, N.N.; Soldatov, N.K.; Moskovskoye Vysshaye
Tekhnicheskoye Uchilishche im. N.E. Baumana



3/2

19821983

Composite Materials

USSR

UDC 669.715

KOLPASHNIKOV, A. I., MANUYLOV, V. F., TRUTNEV, V. V., DUMAYEV, A. A. and SHIRYAYEV, YE. V.

"Reinforced Material Based on Aluminum and Weldable Aluminum Alloys"

Moscow, Tsvetnyye metally, No 2, Feb 72, pp 56-57

Abstract: This study concerns the mechanical properties of composites, the structure of transition zones, and the metal flow in rolling prefabricated blanks designed for service under high work loads in assemblies and structures. Composite sheet metal blanks based on AMg6 alloy reinforced with Kh18N9T and EP322 steel wire fibers show a tensile strength of 53.6 and 69.2 kg/mm² and a bend angle of 55.7 and 36.5° at a specific weight of 3.46 g/cm³. Reinforcement with EP322 steel fibers produces composites with a strength exceeding that of Kh18N9T steel-wire reinforced composites by 29.1%. The amount of wire reinforcement is 15% in both materials. Tables in the original article show the relationship between the percentage of fibers and the strength of the composite material. (3 illustrations, 4 tables, 3 bibliographic references).

1/1

USSR

UDC 612.74:612.13)-06:612.816.1

MANVELYAN, I. B., and KHAYUTIN, V. M., Laboratory of Biophysics of the Cardiovascular System, Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow.

"Investigation of Working Hyperemia of a Skeletal Muscle. Parameters of Electric Stimulation of a Mixed Nerve"

Moscow, Byulleten' Eksperimental'noy Biologii i Mediciny, Vol 69, No 4, April 1970, pp 21-23

Abstract: Application of rectangular pulses of 0.2 msec duration with an amplitude of 0.3 v to severed sciatic nerves of cats resulted in maximal contraction of the muscle without excitation of the vasomotor fibers, proving the possibility of selective stimulation in the mechanism governing working hyperemia. An increase in amplitude did not increase the intensity of muscle contraction nor did it affect working hyperemia. However, very large amplitudes applied to the sciatic nerve, many times those necessary for the maximal contraction of the muscle, did cause excitation of the vasomotor fibers of the sympathetic nerve.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--20NDV70
TITLE--INDEPENDENCE OF THE BLOOD SUPPLY OF THE CONTRACTING MUSCLE FROM THE
EXERTED FORCE AND HINDRANCE OF ITS SHORTENING -U-
AUTHOR--(03)-MANVELYAN, L.R., KHAYUTIN, V.M., KHORUNZHIY, V.A.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,
NR 6, PP 6-9
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCLE PHYSIOLOGY, EXERCISE, ELECTROPHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3C04/0711

STEP NO--UR/0219/70/049/006/0006/0009

CIRC ACCESSION NO--AP0131310

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--A0131310

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. IN ACUTE EXPERIMENTS ON CATS IT WAS ESTABLISHED THAT THE INTENSITY OF VASODILATION IN GASTROCNEMIC MUSCLE AND THE DURATION OF ITS TONE RESTORATION AFTER CONTRACTION DOES NOT DEPEND ON THE DEGREE OF SHORTENING OF THE MUSCLE DEVELOPING DURING ITS CONTRACTION AND THE VALUE OF PHYSICAL WORK, BUT IS DETERMINED ONLY BY THE FREQUENCY OF IMPULSES IN THE MOTOR FIBERS. THE CRITICAL FREQUENCY OF IMPULSES, DURING WHICH THE CONTRACTING MUSCLE COMPRESSES ITS VESSELS IS SIMILAR FOR ISOTONIC AND AUXOTONIC CONTRACTIONS, AND IN THE MAJORITY OF EXPERIMENTS COMPRISES APPROXIMATELY 16 IMP PER SEC.

FACILITY: INSTITUTE OF NORMAL AND PATHOLOGICAL PHYSIOLOGY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE RELATION OF BLOOD FLOW IN AUXOTONICALLY CONTRACTING
GASTROCNEMIUS MUSCLE TO THE FREQUENCY OF STIMULATION -U-
AUTHOR--(03)-MANVELYAN, L.R., KHAYUTIN, V.M., KHORUNZHIY, V.A.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 5, PP 14-18
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MUSCLE PHYSIOLOGY, MUSCLE STIMULATION, BLOOD CIRCULATION,
ELECTROPHYSIOLOGY, HYPEREMIA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0367 STEP NO--UR/0219/70/069/005/0014/0018
CIRC ACCESSION NO--AP0121055
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121055

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BLOOD FLOW IN THE GASTROCNEMIUS MUSCLE OF THE CAT DURING SUPRAMAXIMAL STIMULATION OF THE MUSCLE EFFERENT FIBRES UNDER AUXOTONIC REGIME OF CONTRACTION WAS STUDIED IN RELATION TO THE FREQUENCY OF STIMULATION (0,125-256 PULSES PER SEC.). THE CRITICAL FREQUENCY WAS 16 PULSES PER SEC., AT WHICH WAS ATTAINED THE MAXIMAL POSTCONTRACTION PEAK BLOOD FLOW, A COMPRESSION OF THE BLOOD VESSELS DURING MUSCLE CONTRACTION AND AT WHICH THE DURATION OF POST CONTRACTION HYPERAEMIA INCREASED BY LEAPS. RESULTS ARE COMPARED WITH THE DATA ON THE FREQUENCY OF MOTONEURON PULSES IN MAN WHICH ARE TYPICAL FOR THEIR INVOLVEMENT AND FOR THE CHANGE FROM WEAK POSE EFFORT TO STRONG CONTRACTIONS. FACILITY: INSTITUTE OF NORMAL AND PATHOLOGICAL PHYSIOLOGY, USSR ACADEMY OF MEDICAL SCIENCES, MOSCOW.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--INVESTIGATION OF THE WORKING HYPEREMIA OF THE SKELETAL MUSCLE.
PARAMETERS OF THE ELECTRIC STIMULATION OF THE MIXED NERVE -U-
AUTHOR-(02)-MANVELYAN, L.R., KHAYUTIN, V.M.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 4, PP 21-23
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CAT, MUSCULOSKELETAL SYSTEM, NERVE, HYPEREMIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REFL/FRAME--1988/1576

STEP NO--UR/0219/70/069/004/0021/0023

CIRC ACCESSION NO--AP0106322

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--02OCT70

2/2 022

CIRC ACCESSION NO--AP0106322

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. EXPERIMENTS CONDUCTED ON CATS BROUGHT EVIDENCE THAT RECTANGULAR PULSES OF 0.2 MSEC DURATION WITH AMPLITUDE UP TO 3 V ENSURE SUPERMAXIMAL STIMULATION OF MOTOR FIBERS IN THE SEVERED SCIATIC NERVE, WITHOUT CAUSING EXCITATION OF VASOMOTOR FIBERS, THUS PROVIDING THE POSSIBILITY OF THERE SELECTIVE STIMULATION DURING INVESTIGATION OF THE MECHANISMS GOVERNING WORKING HYPEREMIA.

UNCLASSIFIED

M
USSR

UDC 612.741.61

MANVELYAN, L. R., KHAYUTIN, V. M., and KHORUNZHIY, V. A., Laboratory of the Biophysics of the Cardiovascular System Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR

"Independence of the Blood Supply of Contracting Muscle From the Force It Exerts and Barriers to Shortening It"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 6, 1970, pp 6-9

Abstract: In acute experiments on anesthetized cats, the intensity of dilatation of the gastrocnemius blood vessels and the time required for their tone to be restored were found to be independent of the degree of shortening of the muscle, force exerted by it, or amount of physical work. The sole determining factor is the frequency of impulses in the motor fibers. The critical frequency of impulses at which the contracting muscle compresses its blood vessels is the same for both isotonic and auxotonic contractions (mostly 16 pulses/sec).

1/1

USSR

UDC: 576.851.42:576.858.9

M
OSTROVSKAYA, N.N., MANYKIN, A.A., and TOIMACHEVA, T.A., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Electron-Microscope Study of Br. abortus and B. suis Cells at Different Periods of Interaction with Tb Phage Particles"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 2, 1970, pp 76-78

Abstract: A fundamental difference was noted in the interaction of Tb phage particles with cells of the two Brucella species. In preparations of ultra-thin sections of Br. abortus, cells with adsorbed phage particles were seen after 1½-3 hours of contact. After 6-9 hours of contact, reproduced particles were clearly visible within the cells against the background of cytoplasm. There were also ultrastructural changes in the nucleus and cell wall. The effect of the phage on B. suis was quite different. The preparations contained phage-free, unaltered cells or cells with adsorbed particles. Experiments with several B. suis strains failed to reveal the presence of phage particles within the cells. Large quantities of detritus observed in several visual fields were indicative of destruction of the cells, possibly caused by "lysis from without."

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Acc. Nr: **AP0044187**

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i
Immunobiologii, 1970, Nr 2, pp 76-78

ELECTRON MICROSCOPIC STUDY OF THE SECTIONS
OF BR. ABORTUS AND SUIIS CELLS AT VARIOUS PERIODS
OF THEIR INTERACTION WITH THE CORPUSCLES
OF Tb PHAGE

N. N. Ostrowskaya, A. A. Manykin, T. A. Tolmacheva

In ultra-thin sections of Br. abortus and suis cells prepared after a different period of contact with corpuscular Tb phage there was revealed a principal difference in the interaction of the phage and cells of the mentioned species of brucella. Various periods of interaction of the phage and cells were revealed in the sections of Br. abortus cells: the time of adsorption, the intracellularly localized reproduced corpuscles of the phage and their exit; changes in submicroscopic structure of Br. abortus cells were also noted. Interaction of Br. suis cells with the corpuscles of Tb phage were limited by the process of adsorption. This pointed to the fact that the lysis of Br. suis cells observed in the presence of multiplicity of infection is conditioned by lysis from without.

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1/2 071 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DEVELOPMENT OF PRODUCTION TECHNOLOGY FOR CERMET ALUMINUM AND
INVESTIGATION OF ITS PROPERTIES -U-
AUTHOR--(05)--FEDURCHENKO, I.M., BELOBURDOV, I.I., AFANASYEV, V.F..
NENAKHOV, A.V., MANYKIN, E.T.
COUNTRY OF INFO--USSR, UNITED STATES
SOURCE--KIEV, POROSHKOVAYA METALLURGIYA, NO 3, MAR 70, PP 39-42
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM, POROUS, HEAT TRANSFER, FLUORINE, GRAPHITE, LEAD,
ANTIFRICTION ALLOY, ANTIFRICTION MATERIAL, IMPACT STRENGTH, MECHANICAL
PROPERTY, CERMET

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0409

STEP NO--UK/0226/70/000/003/0039/0042

CIRC ACCESSION NO--AP0119351

UNCLASSIFIED

2/2 071

UNCLASSIFIED

PROCESSING DATE--23OCT70

1-CIRC ACCESSION NO--AP0119351

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY IS MADE OF THE POSSIBILITY OF PRODUCING A POROUS ALUMINUM SKELETON WHICH WOULD PERMIT MANUFACTURE OF A METAL CERAMIC ANTIFRICTION MATERIAL. THE DEVELOPMENT OF A PRODUCTION PROCESS FOR POROUS ALUMINUM FROM ALUMINUM AND SODIUM CHLORIDE POWDERS OF 0.1-0.3 AND 0.1-0.2 MM PARTICLE SIZE, RESPECTIVELY, IS DESCRIBED. PELLETS WERE SINTERED IN ACCORDANCE WITH UNITED STATES PATENT NO 3276067. PELLET SINTERING QUALITY WAS DETERMINED BY MEASURING THE IMPACT DUCTILITY, HARDNESS, AND STRENGTH AT CUTOFF. THE MECHANICAL PROPERTIES OF THE CERMET ALUMINUM ARE SHOWN TO BE COMPARABLE TO THOSE OF A FILLED FLUORINE PLASTIC. THIS WILL MAKE IT POSSIBLE TO USE ALUMINUM NOT ONLY AS A HEAT TRANSFER AGENT, BUT AS A SUPPORTING SKELETON FOR METAL FLUORINE MATERIALS. ANTIFRICTION TESTS CONDUCTED IN AIR AND IN VACUUM (2 TIMES 10 PRIME NEGATIVES TO 5 TIMES 10 PRIME NEGATIVE6 MM HG) ON SAMPLES WITH A 50PERCENT POROSITY IMPREGNATED WITH FLUORINE PLASTIC 4, FILLED WITH GRAPHITE, LEAD, AND MOLYBDENUM SULFIDES, SHOWED THE POSSIBILITY OF THEIR USE AT SPEEDS UP TO 0.25 M-SEC AND AT PRESSURES UP TO 10 KG-CM PRIME2. ORIGINAL ARTICLE HAS 3 TABLES.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DEPENDENCE OF THE MECHANICAL CHARACTERISTICS OF CARBON STEEL 35 ON
THE RATE OF TENSILE AT LOW TEMPERATURES -U-
AUTHOR--(02)-YAREMA, S.YA., MANYUK, Z.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (2), 30-37

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--TENSILE TEST, CARBON STEEL, CRYOGENIC PROPERTY, DEFORMATION
RATE, YIELD STRESS/(U)35 CARBON STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3002/1678

STEP NO--UR/0369/70/006/002/0030/0037

CIRC ACCESSION NO--AP0129048

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129048

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF TESTING THE MECHANICAL CHARACTERISTICS OF C STEEL SAMPLES AT LOW (LIQUID N) TEMP. AS FUNCTIONS OF THE RATE OF TENSILE STRESS APPLIED IS DESCRIBED AND THE RESULTS OF SOME TYPICAL TESTS ARE PRESENTED. A SEMI EMPIRICAL FORMULA EXPRESSING THE TEMP VELOCITY DEPENDENCE OF THE YS IS DERIVED. THIS FORMULA AND THE RESULTS WHICH IT REPRESENTS ARE COMPATIBLE WITH EXISTING THEORY AND EXPERIMENT.

UNCLASSIFIED

USSR

UDC: 680.172.25:669.14

YAREMA, S. YA., ~~MANYUK, Z. M.~~ Physical-Mechanical Institute of the Ukrainian SSR Academy of Sciences, L'vov

"Mechanical Characteristics of Steel 35 as a Function of the Low Temperature Stretching Rate"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 2, 1970, pp 30-37

Abstract: This article contains the results of investigation of medium carbon steel 35 in the temperature range of 77-300°K with variation of the loading rate from static to impact with ($\dot{\epsilon}=6-21 \cdot 10^4$ kilogram-force/cm² · sec). The mechanical properties of metals with body-centered cubic lattices, including the majority of construction materials, are highly sensitive to temperature changes and deformation rates at low homologous temperatures. Investigation of these relations is important not only in determining the workability of the material but also in studying brittle fracture and the mechanism of plastic flow which is not complicated by diffusion and recrystallization processes under these conditions. The stress-strain diagrams constructed on the basis of the oscillograms are presented. The nature of the diagrams changes comparatively little with an increase in the deformation rate. For a small $\dot{\epsilon}$ the rate curves are above the static curve; then with an increase in $\dot{\epsilon}$ the rate curves approach the static curve and at negative temperatures they even intersect it. Intersection takes place faster the lower

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USSR

YAREMA, S. YA., MANYUK, Z. M., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 2, 1970, pp 30-37

the temperature. Reducing the temperature has the sharpest effect on the form of the diagram: the diagrams go up and down especially at temperatures below 170°K . At 77°K and a maximum deformation rate, the nature of the diagram becomes standard for brittle fracture.

Analysis of the set of diagrams shows that the experimental values of all the mechanical characteristics can be plotted well on straight lines (part of the straight lines are presented in Figure 3) corresponding to the linear relations for these values as functions of the logarithm of the elastic or plastic deformation rate. The slope of these lines increases with a decrease in temperature to 150°K , which indicates an increase in sensitivity to the deformation rate.

The data show that the temperature dependence of the mechanical characteristics is appreciably stronger than the rate dependence. The intensity of growth of the yield point and ultimate strength increases as the temperature is lowered. In the temperature range of $140-160^{\circ}\text{K}$ the following qualitative changes take place: the elongation per unit length and reduction of area are reduced, the true rupture strength reaches a maximum, an inflection is observed on the yield point rate curve, and the conical section disappears in the fracture. The law of variation of the upper yield point is also analyzed. An analytical expression is

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USSR

YAREMA, S. YA., MANYUK, Z. M., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 2, 1970, pp 30-37

presented for determining the upper yield point based on the described laws. Results obtained earlier by various authors are discussed in the light of the new data.

3/3

USSR

UDC 547.794:543.422

SHVETSOV-SHILOVSKIY, N. I., IGNATOVA, N. P., BOBKOVA, R. G., MANYUKHINA, V. YA.,
and MEL'NIKOV, N. N.

"Some Derivatives of Phosphadiazoles-1,2,3"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1939-1941

Abstract: Continuing the study of the reaction of phosphorus trichloride with hydrazones, β -Cyanoethylhydrazones of acetone, acetophenone and p-bromoacetophenone were reacted with PCl_3 , yielding derivatives of phosphadiazole-1,2,3. Benzoyl- and carbobutoxyhydrazones of acetone reacted with PCl_3 to yield 2-substituted phosphadiazoles. Adding aniline to 2-acetyl-4-methylphosphadiazole along the -P:C bond gave 1-anilino-2-acetyl-4-methylphosphadiazole-1,2,3. Analogously starting with 2-acetyl-4-methyl-1-chloro-1,5-dihydrophosphadiazole and 8-hydroxyquinoline, 2-acetyl-4-methyl-1-(8-hydroxyquinolinyl)phosphadiazole-1,2,3 was obtained.

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- 45 -

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PROGRAM FOR CALCULATING THE KINEMATIC PARAMETERS OF ELECTRON TRACKS
IN BUBBLE CHAMBERS, AND RESULTS OF STATISTICAL TESTING -U-
AUTHOR-(03)-GERDYUKOV, L.N., MANYUKOV, B.A., SHLYAPNIKOV, P.V.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, (2), 255-6

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON, BUBBLE CHAMBER, PARTICLE TRACK

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3008/2010

STEP NO--UR/0120/70/000/002/0255/0256

CIRC ACCESSION NO--AP0138864

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 013
CIRC ACCESSION NO--AP0138864

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROGRAM "ELEKTRON" IS
DESCRIBED FOR CALCG. THE KINEMATIC PARAMETERS OF E TRACKS IN BUBBLE
CHAMBERS WITH HEAVY LIQS., SUCH AS C SUB3 H SUB3, C SUB2 F SUB5 CL.
FACILITY: OB'EDIRR. INST. YAD. ISSLED., DUBNA, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MULTIPLE SCATTERING MATRIX WITH ENERGY LOSSES --U-

AUTHOR--(02)--MANYUKOV, B.A., SHLYAPNIKOV, P.V.

COUNTRY OF INFO--USSR

SOURCE--YADERN. FIZ.; 11: 605-7 (MAR 1970)

DATE PUBLISHED--MAR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SCATTERING MATRIX, MULTIPLE SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3001/2218

STEP NO--UR/0367/70/011/000/0605/0607

CIRC ACCESSION NO--AP0127580

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0127580
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A MULTIPLE SCATTERING MATRIX WHICH
TAKES INTO ACCOUNT ENERGY LOSSES OF THE PARTICLE IS OBTAINED WITHIN THE
VALIDITY OF THE FERMI DISTRIBUTION. FACILITY: JOINT INST. FOR
NUCLEAR RESEARCH, DUBNA, USSR.

UNCLASSIFIED

USSR

UDC 577.4

MANYUROV, D. M.

"Problem of Piecewise Linear Programming Two-Way Restrictions"

Za tekhn. progress (For Technical Progress), 1971, No 12, pp 16-17 (from RZh-
Kibernetika, No 7, Jul 72, Abstract No 7V490)

No abstract

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- 46 -

USSR

UDC 539.374

GREKHOV, V. A., MANZHELEY, V. I., MITROFANOV, V. V., NIKOLAYEV, V. P.,
TITOVA, N. S., SHOYKHET, G. Ya.

"Experimental Study of the Strength of Thin-Walled Rectangular Tube Under
Cyclic Axial Loading in the Elastic-Plastic Region"

V sb. Dinamika splosh. sredy. Vyp. 8 (Dynamics of a Continuous Medium.
No. 8 -- Collection of Works), Novosibirsk, 1971, pp 144-151 (from RZh-
Mekhanika, No 8, Aug 72, Abstract No 8V361)

Translation: The strength of a tube with a transverse cross section in the
form of a rectangular trapezoid welded at the ends to fixed rigid parts
under a cyclic temperature effect was studied. Experiments were made on
the object itself and on models, reduced tubes of rectangular cross section.
The tube was subjected to a variable load and cooling up to given tempera-
tures. The models were deformed without changing the temperature, com-
pression was achieved up to a given deformation, and stretching was achieved
up to a given value of the axial force. The material for the tube and the
models was Kh18N10T steel. Test results based on 100 cycles are discussed.
Stability losses in the walls and limited growth of deformation under the
first cycles are noted. The test ended with the formation of cracks in some
cases. D. A. Gokhfel'd.

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USSR UDC: [537.226+537.311.33]:[539.3+536.21+536.631+536.651]

POPOV, V. A., KANZHELIV, V. G., and VLADIMIROVA, L. I.

"Thermal Capacitance of Ammonium Deuteride Solids"

Tr. Fiz.-tekhn. in-t nizk. temperatur AN USSR (Transactions, Physico-Technical Institute of Low Temperatures, Ukrainian Academy of Sciences) 1971, No. 12, pp 18-23 (from RZh-Fizika, No. 11, 1971, Abstract No. 11E832)

Translation: The heat capacitance of solid ND₃ in the temperature interval of 2-197° K as well as the melting enthalpy H_{tr} and the temperature T_{tr} corresponding to the triple point of ND₃ are determined. The contributions of the various forms of the molecular thermal movement in the heat capacity are analyzed. The enthalpy of the formation of orientation defects in solid ND₃ is determined. A discussion is given of the temperature dependence of the thermal capacitance. Bibliography of 16.

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- 110 -

1/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THE HEAT CAPACITY OF SOLID CF SUB4 -U-
AUTHOR--BAGATSKIY, M.I., ~~MANZHELIY, V.G.~~, POPOV, V.A.
COUNTRY OF INFO--USSR M
SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 37, NR 1, PP 65-72
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--HEAT CAPACITY, CRYSTAL STRUCTURE, MOLECULAR STRUCTURE,
FLUORINATED ORGANIC COMPOUND, METHANE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0635 STEP NO--GE/0030/70/037/001/0055/0072
CIRC ACCESSION NO--AP0107232
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107232

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE HEAT CAPACITY OF SOLID
TETRAFLUOROMETHANE HAS BEEN MEASURED IN THE TEMPERATURE RANGE 2 TO
20 DEGREES K. THE ANALYSIS OF THE RESULTS OF THIS PAPER AND LITERATURE
DATA ON THE HEAT CAPACITY ALLOW TO MAKE CONCLUSIONS ABOUT THE CHARACTER
OF THE HEAT MOTION OF THE MOLECULES IN CRYSTALLINE CF SUB 4. AN "EXTRA"
HEAT CAPACITY OF CF SUB 4 NEAR THE PHASE TRANSFORMATION TEMPERATURE
TAU LAMBDA EQUALS 76.09 DEGREES K IS DUE TO ORIENTATIONAL DISORDERING. THE
TEMPERATURE DEPENDENCE OF THE "EXTRA" HEAT CAPACITY DELTA C SUB O R IS WELL
DESCRIBED BY THE LOGARITHMIC FUNCTION DELTA C SUB O R SIMILAR TO LG (L
MINUS TAU) TAU LAMBDA).

UNCLASSIFIED

USSR

UDC: 681.32.001

NEKRASOV, M. M., MANZHELO, V. A., MARTYNYUK, Ya. V., ZLOGODUKH, G. M.

"The Future of Utilizing Piezoelectric Elements in Computer Technology"

Poluprovodn. tekhn. i mikroelektronika. Resp. mezhved. sb. (Semiconductor Technology and Microelectronics. Republic Interdepartmental Collection), 1971, vyp. 6, pp 71-74 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B143)

Translation: The authors describe the principal types of piezoelectric elements which have been specifically designed for use in computer technology. Data are given on the basic parameters and field of application of analog piezoelectric elements. The possibilities of constructing high-capacity memory units with ferroelectric pulsed piezoelectric register elements are considered. The access time for readout from such a device is measured in fractions of a microsecond. Bibliography of six titles. N. P.

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USSR

UDC 681.142.65

NEKRASOV, H. M., MANZHELO, V. A., MARTYNYUK, YA. V., ZLOGODUKH, G. H.

"Prospects for Using Piezoelements in Computer Engineering"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 71-74

Abstract: A study was made of the basic types of piezoelements the designs of which were especially developed for application in computer engineering. Data are presented on the basic parameters and range of application of analog piezoelements. Special attention is given to the ferroelectric piezoelements designed for storing discrete information. The basic principles of constructing a memory of significant capacity using such elements are noted. The reference cycle when reading out of the described memories can be fractions of a microsecond. The length of the write cycle is on the order of a hundred microseconds, which permits application of relatively low writing voltages and simple write shapers. A write cycle frequency of several kilohertz is attainable. The memory circuit based on pulse elements is similar with respect to complexity to a magnetic memory with linear access.

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AA0052699-

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UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

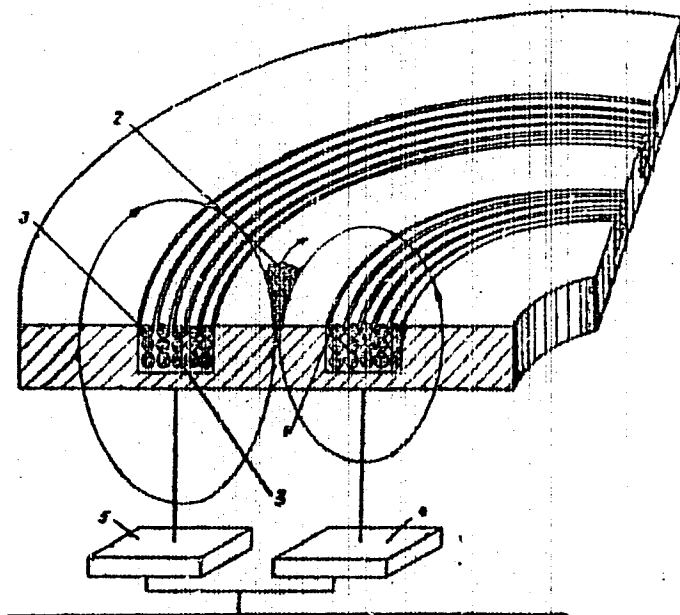
241256 DIELECTRIC MATERIAL ABRASIVE MACHINING
is ensured with grains rotating in a mag-
netic field at a velocity of 1000m/sec. and chips
removed by air blast. The magnetic levitation of
abrasive grains 2 is provided by electromagnet 1,
while the concentric electromagnet 3 limits the
levitation and prevents grain escape from the
field of magnet 1. The magnets are fed by
generators 4 & 5, the alternating or pulsating
current in magnet 1 forming the rotating field.

2.8.67. as 1178289/29-33, MANZHOS, F.M. et al.
(18.8.69) Bul. 13/1.4.69. Class 67a, Int. Cl.
B 24b.

1/2 Manzhos, F. M.; Soldatenok, V. V.; Mazur, V. F.;
Babich-Dekan', F. T. 4

19821493

Acc. Nr.: AA0052699



$\frac{1}{2}$

REEL/FRAME

19821494

1/2 021 UNCLASSIFIED PROCESSING DATE--09DEC70
TITLE--EQUILIBRIUM REACTIONS OF DIBROMOETHANE -U-
AUTHOR--(05)--LEVANOVA, S.V., ROZHNOV, A.M., SEDOV, S.M., STARKOV, V.YA.,
MANZHOS, V.N.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 62-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL REACTION RATE, BROMINATED ORGANIC COMPOUND, ETHANE,
ISOMERIZATION, THERMODYNAMIC FUNCTION, SPECTRUM, HYDROGENATION,
BROMINATION, ENTROPY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1922 STEP NO--UR/0153/70/013/001/0062/0055
CIRC ACCESSION NO--AT0112894
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--09JCT70

CIRC ACCESSION NO--AT0112894

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATE CONST. (K SUBR TIMES 10 PRIME3) FOR THE DEHYDROBROMINATION OF MECHBR SUB2 (I) IS 2.01 AT 413DEGREES, 5.13 AT 157DEGREES, 13.8 AT 176DEGREES, AND 65.0 AT 1216DEGREES. SIMILAR DATA FOR BRCH SUB2 CH SUB2 BR (II) ARE 28.6 AT 131DEGREES, 52.1 AT 140DEGREES, 106.1 AT 156DEGREES, AND 209 AT 174DEGREES. IN STUDIES OF THE ISOMERIZATION OF II TO I, THE PERCENT I IN THE EQUIL. MIXT. (INITIALLY PURE II) IS 1.94 AT 176DEGREES, 2.30 AT 193DEGREES, 2.50 AT 211DEGREES, 2.74 AT 225DEGREES, AND 3.05 AT 245DEGREES. THERMODYNAMIC FUNCTIONS OF II ARE CALCD. FROM BOND LENGTHS AND SPECTRAL DATA AT 25-727DEGREES. VALUES AT 127DEGREES AND 227DEGREES ARE S SUBT, 84.77 AND 90.10 CAL-(DEGREES MOLE), C SUBP, 22.49 AND 25.33 CAL-(DEGREES MOLE), (H SUBT DEGREES H SUBO DEGREES) T, 15.18 AND 16.79 KCAL-MOLE, AND MINUS (2 SUBT DEGREES, H SUBT DEGREES) T, 69.59 AND 73.31 CAL-MOLE. THE REACTION RATE DATA ARE USED TO CALC. THERMODYNAMIC FUNCTIONS FOR THE DEHYDROGENATION AND ISOMERIZATION REACTIONS, AND THE CALCD. ENTROPY CHANGES AGREE WELL WITH LITERATURE DATA.

FACILITY: KUIBYSHEV. POLITEKH. INST. IM. KUIBYSHEVA, KUIBYSHEV, USSR.

UNCLASSIFIED

USSR

UDC: 681.333

KOSHEVOY, A. A., STEKLOV, V. K., MISHCHENKO, R. K., MANZHULO, A. P.

"A Device for Modeling Automatic Control Systems"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 36, Dec 72, Author's Certificate No 360673, Division G, filed 4 Jan 71, published 28 Nov 72, p 126

Translation: This Author's Certificate introduces a device for modeling automatic control systems which contains in addition to a model of an automatic control system operational amplifiers, a nonlinearity module, and a model of system sensitivity. As a distinguishing feature of the patent, the device is simplified by connecting the input of the nonlinear module of the automatic control system model to the inputs of two parallel-connected operational amplifiers with limitation of the positive and negative parts of the input signal. The outputs of these operational amplifiers are connected through an adder to the input of one of the two parallel-connected amplifier units of the system sensitivity model.

1/1

USSR

UDC 62-501.7-501.12:621.3.089.52

KOSHEVOY, A. A., STEKLOV, V. K., MANZHULO, A. P., MISHCHENKO, R. K.

"A Device for Determining the Sensitivity of Nonlinear Automatic Control Systems"

USSR Author's Certificate No 317046, filed 25 Jun 70, published 10 Jan 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9,
Sep 72, Abstract No 9A179 P)

Translation: The proposed device relates to the field of automatic regulation and control and can be used for determining sensitivity functions in automatic control systems containing nonlinear links with nonlinearity of the saturation type. Devices are known for experimental determination of functions [of sensitivity] of the dynamic characteristics of nonlinear automatic control systems to variations in parameters: e. g., a device which realizes the structural method of analysis of the sensitivity of nonlinear systems. Such devices contain a model of the system with a nonlinear element, and a sensitivity model of the system with linear elements. However, such devices are characterized by difficulty of hardware realization of the partial derivative of the output of the nonlinear

1/2

USSR

KOSHEVOY, A. A. et al., USSR Author's Certificate No 317046

element with respect to its input. In the proposed device, the input of the nonlinear element in the model of the system is connected to the input of a linear amplification element in the sensitivity model of the system through two parallel-connected operational amplifiers --- one with clipping of the positive part of the input signal, and the other with clipping of the negative part. The amplitude of the compensation signal arriving at the inputs of the operational amplifiers is equal to the saturation level, and the gain of the linear amplification element in the sensitivity model of the system is equal to the gain of the linear part of the nonlinear element in the model of the system. This design simplifies the hardware realization of the device and improves its reliability.

2/2

USSR

UDC 62-503.53-501.14

STEKLOV, V. K., MISHCHENKO, R. K., KOSHEVOY, A. A., MANZHULO, A. P.

"A Tracking System With Nonlinear Correction"

USSR Author's Certificate No 318907, filed 23 May 70, published 28 Jan 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9,
Sep 72, Abstract No 9A187 P)

Translation: The invention relates to the field of automatic control and can be used in tracking systems where nonlinearity of the backlash type is undesirable. The conventional tracking system is made up of a preamplifier, power amplifier, motor with speed reducer, control object connected in series and covered by feedback, and a relay element connected through an amplifier and differentiating element to the input of the preamplifier. The proposed system also contains a model of a power amplifier with a motor. This model is connected to the input of the power amplifier in the tracking system. The input of the model is connected to the output of the preamplifier, and the motor is connected through a converter to a subtractor whose second input is connected to the output of the relay element, while the subtractor output is connected

1/2

USSR

STEKLOV, V. K. et al., USSR Author's Certificate No 318907

to the input of the power amplifier. This improves the accuracy of the tracking system by completely linearizing linearity of the backlash type in the case of slowly changing controlling actions and by eliminating the static error.

2/2

- 21 -

USSR

"The Ocean is the Center of Attention"

Moscow, Vodnyy Transport, 24 Mar 70, p 2

Abstract: What are the biological resources of the world's oceans? How great is their store of commercial fish? How many varieties of food products can still be taken from the seas' treasure?

Many scientists and institutions are working on the solutions to these questions, including the new, only recently created Scientific Research Institute of Marine Biology, which opened in Vladivostok. Its facilities include six specialized laboratories, many of which existed earlier and have already accumulated a great deal of data on ocean life. Our correspondent N. Manzhurin has requested academic vice-director Yevgeniy Vasil'yevich Krasov to tell about the tasks that confront the institute.

"The primary tasks of our institute," he said, "are to conduct experimental work on sea organisms in the field of genetics, ecology, physiology, biochemistry, and a whole range of other basic disciplines in science. In addition to this, we will study the composition,

1/3

- 17 -

USSR

Moscow, Vodnyy Transport, 24 Mar 70, p 2

patterns, and distribution of sea animals and plants in coastal areas of the Far East seas."

The ocean conceals many mysteries. Its waters contain over 60 billion tons of edible substances. Nevertheless, it is time to seriously ponder the restocking of the ocean's riches. Today, the collective of the institute of marine biology is already working for tomorrow. Laboratory workers in physical ecology are occupied with the problem of resettlement of marine organisms from one basin to another. The reactions of these organisms to changes in salinity, water density and temperature, hydrostatic pressure, radiation background and acid content are being studied.

Geneticists are occupied with the solution of problems of genetic control of the restocking and catching of salmon. The laboratory of fish genetics is the only such laboratory in the Soviet Union. Its objective is to study the internal biochemical differences of commercial fish.

2/3

USSR

Moscow, Vodnyy Transport, 24 Mar 70, p 2

The Institute of Marine Biology is taking the first steps. On the scenic shores of the Amur Bay a laboratory complex will be built, and in the region of Nakhodka, a biological station equipped with the latest in machinery will be built, and its scientific research ship will have great freedom of movement. The institute workers will be able to research any area of the Pacific Ocean.

3/3

USSR

UDC 532.5:621.22

KOVAL', V. P., KOZHEVNIKOV, S. N., MANZIY, V. S., PANCHISHIN, V. I.

"Derivation of the Equations for Non-Steady-State Motion of an Aircraft Turbo-starter With a Hydrodynamic Clutch"

V sb. Nekotor. vopr. prikl. mat. Vyp. 5 (Certain Problems of Applied Mathematics. No. 5 -- Collection of Works), Kiev, 1971, pp 288-297 (from RZh-Mekhanika, No 12, Dec 71, Abstract No 12B998)

Translation: It is noted that in transfer processes in a drive with a hydraulic clutch there occur oscillations in the moment and velocity of the drive shaft which make the process of acceleration of the machine difficult. The equations of motion of the drive with a hydraulic clutch and transfer regimes are derived on the basis of Bernoulli's equation for non-steady-state motion of a liquid. This equation is convenient in the analysis of the rise of unstable operation of the drive. In solving this equation the circulation component of the moment transmitted by the clutch is determined by the Euler equation for a turbine wheel. It is emphasized that one can find the laws for the change in angular velocities of the rotation of the driving and driven shafts of the hydraulic clutch in non-steady-state motion. The startup of a turbojet engine is considered as an example of the analysis. B. N. Chumachenko.

1/1

Acc. Nr: **AP0043676**

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 2, pp 551-557

**EFFICIENCY OF CURRENT HEATING IN A DENSE PLASMA
OF A STRONG CURRENT GAS DISCHARGE**

Manzyuk, N. A.; Suprunenko, V. A.;

Sukhomlin, Ye. A.; Ternopol, A. M.

The physical efficiency of current heating of a dense plasma in a strong current gas discharge stabilized by a strong magnetic field is considered. The heating efficiency is of the order of 60%. Current heating is the result of successive development of a number of streaming instabilities and takes place as long as the current flows in the active region of the discharge. The value of the plasma thermal energy density previously obtained ($nkT = 3 \cdot 10^{18}$ eV/cm³) is confirmed.

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REEL/FRAME
19770080

21 DI

USSR

UDC 575.24

MANZYUK, V. T., and KOZACHENKO, M. R., Ukrainian Scientific Research Institute of Plant Growing, Selection, and Genetics, Kharkov

"Gamma-Ray Irradiation-Induced Mutability of Barley Hybrids and Their Parent Forms"

Moscow, Genetika, Vol 6, No 7, Jul 70, pp 35-43

Abstract: Gamma-ray irradiation (10 kr) of three barley hybrids (Komsomol'ets X Medikum 52-84, Khar'kovskiy 306 X Il'inetskiy 43, Yuobilovskiy X Rumany) and six parent forms induced a variety of morphological, physiological, open flowering and chlorophyll mutations. The hybrids exceeded the parent varieties in general mutability, frequency of each group of mutations, and yield of visible mutations with normal and reduced productivity. The most promising forms were obtained from the hybrids and the Medikum 52-84 variety. Combination variability coupled with mutation variability in the hybrids widened the possible diversity of forms in the hybrid populations. The varieties differed in general mutability, independently of the way they were obtained (hybrid or nonhybrid). Since the relationship between the frequency of different groups of mutations (specifically, between chlorophyll and others) may vary, the effectiveness of mutagenesis must be determined directly from the frequency of changes which are of interest in a particular

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USSR

MANZYUK, V. T., et al, Genetika, Vol 6, No 7, Jul 70, pp 35-43

investigation. The spectrum of chlorophyll mutations in M_2 was widened and their frequency increased by gamma-ray irradiation. The mutability of M_2 plants with respect to protein content was greater than in the control.

2/2

1/2 034 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--RESULTS OF LONGTERM PROPHYLACTIC TREATMENT OF MINERS WITH
PREHYPERTENSION -U-
AUTHOR--MANZYUK, YE.YE. M
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 142-144
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MINERAL INDUSTRY, COAL, INDUSTRIAL HYGIENE, HYPERTENSION,
PROPHYLAXIS, OXYGEN THERAPY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0671 STEP NO--UR/0475/70/000/003/0142/0144
CIRC ACCESSION NO--AP0102655
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0102655

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE ANALYSED OF LONG TERM PROPHYLACTIC TREATMENT OF 266 COAL MINERS WITH PREHYPERTENSIVE STATES. THE EFFICIENCY IS SHOWN OF LONG TERM (FOR FIVE YEARS) PROPHYLAXIS INCLUDING SEPARATE CYCLES OF SEDATION AND HYPOTENSIVE THERAPY, OXYGEN THERAPY, ULTRAVIOLET THERAPY. THIS PROPHYLACTIC TREATMENT OF COAL MINERS SUFFERING OF PREHYPERTENSIVE SYNDROMES MADE IT POSSIBLE TO REDUCE MORBIDITY AND DECREASE THE PERCENTAGE OF TEMPORARY LOSS OF WORKING CAPACITY.

UNCLASSIFIED

MARACHEV, A. G.

CHRONIC PROGRESSIVE LUNG DISEASE AS A REGIONAL PATHOLOGY IN SOME NORTH-EASTERN PARTS OF THE USSR

SO:JPRS 54534

23 NOV 71

UDC: 616.13-035.12:036.21(470.1)

Article by A.G. Marachev, R.I. Mirova, L.R. Borovnik, A.A. Shvetzov, R.E. Zaitseva, A.S. Nersisyan, T.S. Gromkova, Institute of Human Morphology of the USSR Academy of Medical Sciences, Moscow, Nogradskaya Oblast Hospital, Moscow, Vestnik Akademi Meditsinskikh Nauk SSSR, Moscow, No 10, 1971, pp 3-16

At the present time, the attention of pathologists and clinicians is being drawn more and more to chronic progressive diseases of the lungs resulting in fibrosis and emphysema. For many years, chiefly in England, they were called chronic bronchitis which, since the time of Bodham (1808), has been considered practically a traditional English disease. It is not by chance that Stokes (1877) in his classical textbook on thoracic pathology devoted much more attention to it than to tuberculosis. English researchers have authored many works dealing with the symptomatology, x-ray diagnostics and possible etiology of chronic bronchitis. Its traditional link with the humid climate of the British Isles, exacerbation of the disease during the cold season have become firmly fixed in the consciousness of many physicians.

A comprehensive monograph dealing with chronic bronchitis has been published by a team of English physicians and edited by Oswald (1958). This author demonstrated, in particular, that in England and Wales, 30,000 people died of bronchitis in 1953, which constitutes 7 percent of all causes of death. To this we should add 21,000 deaths due to pneumonia, 2,000 deaths due to bronchiectasis, and 3,000 deaths because of asthma. It is not by chance that we compare these indices, since bronchitis, asthma, bronchiectasis, as well as emphysema are often combined, and it is only the chief clinical syndrome that makes it possible to separate them into different categories.

The incidence of chronic bronchitis is described in contradictory ways. However, there is no doubt that under specific climate conditions this disease could be one of the chief causes of disability. Evidently, the sickness begins at an early age (20-30 years), but most deaths are referable to the elderly and aged (Oswald). Among its victims there is prevalence of individuals in specific professions, but metallurgical, transportation, and communications workers are stricken particularly often. In England, bronchitis does not spare agricultural workers, unskilled laborers, and representatives of other occupational groups.

1/2 029 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THEORY OF INFRARED LATTICE VIBRATION ABSORPTION BY OPTICAL PHONONS
IN BINARY METALLIC ALLOYS -U-
AUTHOR--IPATOVA, I.P., MARADUDIN, A.A., MILLS, D.L.
COUNTRY OF INFO--USSR M
SOURCE--SOLID STATE COMMUN. 1970, 8(7), 561-8
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--CRYSTAL LATTICE VIBRATION, BINARY ALLOY, IR ABSORPTION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1332 STEP NO--US/0000/70/003/007/0561/0568
CIRC ACCESSION NO--AP0107805
ZZZZZZZZZZ UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107805

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SIMPLE THEORY OF THEIR LATTICE VIBRATION ABSORPTION BY THE OPTICAL MODES OF CUBIC BINARY METALLIC ALLOY IS PRESENTED AND ITS STRENGTH IS ESTD. WITH RESPECT TO THE STRENGTH OF THE BACKGROUND ABSORPTION BY FREE CARRIERS. THE POSSIBILITY OF EXPTL. OBSERVATION OF THIS ABSORPTION IS DISCUSSED.

0123

UNCLASSIFIED

USSR

MARADUDINA, N. V., and BRUNNEK, N. I.

Bystrozamorozhennyye Kulinarneye Izdeliya i Tekhnologiya Ikh Ispol'zovaniya
(Quick-Frozen Foods and Technology for Using Them), Moscow, "Ekonomika,"
1972, 64 pp

Translation: Annotation: The purpose of the brochure is to acquaint public catering workers with certain problems of organizing the production of quick-frozen foods in the Soviet Union and abroad.

The reader will become acquainted with the technology for producing quick-frozen dishes, culinary items, and semifinished articles, and conditions for defrosting, storing, and heating them as developed by the following scientific research institutes: VNIKOP [All Union Scientific Research Institute of the Canning and Dehydrated Vegetable Industry], VNIKHI [All Union Scientific Research Institute of the Refrigeration Industry], VNIIMP [All Union Scientific Research Institute of the Meat Industry], and NIITOP [Scientific Research Institute of Trade and Public Catering].

The brochure is designed for production experts and cooks at public catering enterprises.

1/4

- 75 -

USSE

MARADUDINA, N. V., and BRUNNEK, N. I., Bystrozamorozhenyye Kulinarnyye Izdeliya i Tekhnologiya Ikh Ispol'zovaniya, Moscow, "Ekonomika," 1972, 64 pp

The author of sections I-VI is N. V. Maradudina, senior engineer at VNIKhI, while sections VII-IX were written by N. I. Brunnek, senior scientific associate at NIITOP.

Table of Contents:

	Page
I. Production of Quick-Frozen Foods in the USSR	3
II. Preparation of Quick-Frozen Cooked Dishes	5
Salads	5
First Courses	6
Second Courses	13
Beef Goulash	15
Stewed Beef	16
Meatballs With Onion in Red Sauce	17
Pork Ragout	17
Boiled Tongue With Vegetables in White Sauce	18
Kidneys in Red Sauce	19
Minced Steak	19
Roast Beef	

USSR

MARADUDINA, N. V., and BRUNNEK, N. I., Bystrozamorozhennyye Kulinarneye
Izdeliya i Tekhnologiya Ikh Ispol'zovaniya, Moscow, "Ekonomika," 1972, 64 pp

	Page
III. Preparation of Semifinished Foods	23
Fresh Vegetables	23
Semifinished Vegetable Products	24
Blanched Vegetable	24
Sauteed Vegetables	25
Borsch Ingredients	25
Soup Ingredients	25
Greens	25
Potato Cutlets	26
Half-Browned Potatoes	26
Semifinished Meat Products	26
Meat Pel'meni	27
Quenelles	27
Semifinished Foods from Curds	27
Vareniki [curd or fruit dumpling]	27
Fruits and Berries	29
IV. Freezing and Packing	33
V. Storage and Transportation	

3/4

- 76 -

USSR

MARADUDINA, N. V., and BRUNNEK, N. I., Bystrozamorozhennyye Kulinarneye Izdeliya i Tekhnologiya Ikh Ispol'zovaniya, Moscow, "Ekonomika," 1972, 64 pp

VI. Production of Quick-Frozen Cooked Dishes Abroad	Page 35
VII. The Use of Quick-Frozen Dishes at Public Catering Enterprises	42
Heating First Courses	42
Heating Second Courses	43
Meat Dishes	43
Dishes and Side Vegetables	44
Side Dishes of Groats	44
Blinchiki [small pancakes] with Various Stuffings,	
Cold and Baked Puddings	44
Microwave Heating	47
Rules of Work on the Volzhanka Super High Frequency	
Device	50
Safety Rules	51
VIII. Requirements for Quality of and Laying Out Heated Dishes	51
IX. Model Daily Diets	54

1/2 009
UNCLASSIFIED
TITLE--REACTION OF MAGNESIUM BICARBONATE AND CALCIUM HYDROXIDE -U-
PROCESSING DATE--23OCT70
AUTHOR--(03)-ARAV, R.I., MILOVIDOVA, L.V., MARAGINA, L.G.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 498-501.
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CALCIUM HYDROXIDE, MAGNESIUM CARBONATE, REACTION KINETICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1945
STEP NO--UR/0080/70/043/003/0498/0501
CIRC ACCESSION NO--AP0118907
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF THE INTERACTION
KINETICS OF $Mg(HCO\ SUB3)SUB2$ AND $Ca(OH)\ SUB2$ IN RELATION TO THE
INTRODUCTION OF $MgCO\ SUB3$.3H $SUB2\ O$ AND $CaCO\ SUB3$ CRYSTALS SHOWED THAT
WITH AN INCREASE OF $CO\ SUB3\ (OH)\ SUB2$ CONTENT, THE PROCESS TIME IS
SHORTENED BY APPROX. A FACTOR OF 4. A TEMP. INCREASE SPEEDS UP THE PPTN.
OF Mg IONS. FACILITY: KRYM. FINIAL GOS. NAUCH. ISSLED. INST.
STROIT. MATER. IZDELII, USSR.

UNCLASSIFIED

1/2 007

UNCLASSIFIED

PROCESSING DATE--JUL 70

TITLE--AROMATIZATION OF ADDUCTS OF FURAN SULFIDES WITH MALEIC ANHYDRIDE

-U-

AUTHOR--(03)--DANYUSHEVSKIY, YA.L., MARAKATKINA, M.A., GOLDFARB, YA.L.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 865-70

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FURAN, SULFIDE, MALEIC ANHYDRIDE, EPOXY COMPOUND, HETEROCYCLIC
OXYGEN COMPOUND, PHTHALIC ANHYDRIDE, ALDEHYDE, AROMATIZATION, SULFUR
ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/2086

STEP NO--UR/C366/70/006/004/0865/0870

CIRC ACCESSION NO--AP0125673

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125673

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF MALEIC ANHYDRIDE (I) WITH 4, (RS, SUBSTITUTED), 2, METHYLFURANS (II) IR EQUALS ET, PH, PHCH SUB2, BU) GAVE 5, (RS, SUBSTITUTED), 3, METHYL, 3, 6, EPOXY, 1, 2, 3, 6, TETRAHYDROPHthalic ANHYDRIDES (III). IN CONTRAST TO II, 2, ALKYLTHIOFURANS OR 5, ALKYL, THIO, 2, ALKYL FURANS DO NOT FORM STABLE ADDUCTS WITH I. THE TREATMENT OF III WITH COLD, CONCO. H SUB2 SO SUB4 AROMATIZED THEM TO 5, (RS, SUBSTITUTED), 3, METHYLPHthalic ANHYDRIDES, WHICH WERE OXIDIZED WITH H SUB2 O SUB2 IN ACCH TO 5, (RSO SUB2, SUBSTITUTED), PHthalic ACIDS (IV). THE DISTN. OF IV IN VACUO GAVE THE CORRESPONDING ANHYDRIDES. THE SYNTHESIS OF II IS DESCRIBED. THE OXIDN. OF II GAVE 4, (RO SUB2 S, SUBSTITUTED), 2, METHYLFURANS. THE REACTION OF II WITH HCONME SUB2 AND POCL SUB3 GAVE 3, (RS, SUBSTITUTED), 4, METHYL, 2, FURANCARBOXYALDEHYDES.

FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

AP0049957

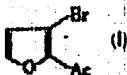
Abstracting Service:

CHEMICAL ABST.

Ref. Code:

U1R0409

90163u Synthesis of 3-bromofuran, and the product of its acetylation. Gol'dfarb, Ya. L.; Marakatkina, M. A.; Belen'kii, L. I. (Inst. Org. Khim. im. Zelinskogo, Moscow, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 132-3 (Russ). 2-Acetyl-3-bromofuran (I) described as a liq. (Nazarova, Z. N.; et al., 1969) in the cold is actually a solid, bp 107-10°, in a 4:1 mixt. of



I and 4-bromo-2-acetylfuran. *Z. m.* 43.5-4° (semicarbazone m. 221-2°), with NaOBr gave 3-bromofuran-2-carboxylic acid, m. 159.5-60°. G. M. Kosolapoff

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UDC 621.396.6.019.3

DOVGAL', S. I., KREDENTSER, B. P., MARAKHOVSKIY, A. VE.

"Analyzing the Operational Quality of Electronic Circuits by Statistical Modeling With the Computer"

Kiev, Izvestiya VUZ -- Radioelektronika, Vol 13, No 7, 1970, pp 868-873

Abstract: Although a good many papers have been devoted to the problem of the operational reliability of electronic circuits subject to gradual breakdown, a complete method of analysis of parametric reliability has yet to be developed. The purpose of this article is to consider an engineering method for investigating the problem by reliability criteria which are to a large extent free from the limitations of existing methods. The object of this investigation are elementary functional units such as inverters, flip-flops, phantastons, amplifiers, and the like. The method proposed for this investigation can also be used for more complex units. Four stages are outlined for statistically testing mathematical models of the unit under investigation using universal digital computers: first, finding a mathematical description of the circuit, obtaining initial data for the laws of distribution of all primary parameters, and establishing the conditions of normal circuit operation; second, formalizing the process of the circuit

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- 116 -

MARAKHOV, V.M.

APPROVED FOR RELEASE: 09/01/2001

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SECTION XIII

11-1. SELECTIVE GROWTH OF EPITAXIAL LAYERS OF $AlGa_{1-x}As$ SOLID SOLUTIONS

Article by V. V. Gusev, V. N. Nurebreyev, E. A. Makhalin, Leningrad: Khim. i. fiz. 1972, No 1, p. 17. 1972. 12-17 June 1972. P 1821

The present paper is devoted to a study of the process of selective growth of layers of $AlGa_{1-x}As$ solid solutions on the surface of monocrystalline gallium arsenide. At the protective mask, aluminum oxide films were used which were applied by evaporation of organoaluminum compounds in which the substrate selective etching created "windows" of given configuration. The growth of the solid solution layers on the parts of the substrate not protected by masks was carried out by the method of liquid solution from a melt of gallium at temperatures of 950-850°C in Kramite containers of special configuration. An estimate of the quality of the epitaxial layers and reproducibility of their composition with respect to area and from process to process was made by comparison of the parameters of the light diodes obtained on the given layers by the method of selective zinc diffusion.

- 187 -

USSR

DOVGAL', S. I., et al., Izvestiya VUZ -- Radioelektronika, Vol 13, No 7, 1970, pp 868-873

operation and constructing the mathematical model; third, developing modeling algorithms and their programs for the computer; fourth, repeatedly realizing the modeling algorithm on the computer in imitation of the circuit assembly. The method was verified by investigating a transistor switching circuit with the Ural-2 computer; a derivation of the mathematical description of the circuit for that investigation is given. The authors conclude that statistical modeling combined with analytic methods and extensive experimentation is effective in analyzing the quality of electronic circuit operation.

USSR

UDC 621.316.722.1(C88.6)

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MARAKHOVSKIY, V.B., GITOVICH, A.A., KANEVSKIY, YE.A. [Leningr. otd. Tsentr. ekonomiko-matematich. in-ta AN SSSR--Leningrad Branch Of The Central Economic-Mathematic Institute, AS, USSR]

"Stabilizing Rectifier Based On Silicon Control Diodes"

USSR Author's Certificate No 252409, Filed 9 Sept 67, Published 12 Feb 70 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10B377P)

Translation: A thyristorized d-c voltage regulator is patented which is made in the form of a bridge rectifier, two sections of which are formed with uncontrolled semiconductor diodes, and the other sections with thyristors. Commutation of the thyristors is performed by a frequency network with the aid of a feedback circuit which simultaneously fulfills the role of a duration modulator. To accomplish this a circuit based on three transistors with a time-assigning [vremyazadayaushchiy] capacitor is used. 1 ill. S.D.

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- 57 -

USSR

UDC 621.35.035

CHUB, A. T., MARAKTANOV, V. A.

"Problem of the Effect of the Shape of the Cathode Channel on the Chemotron Converter Characteristic"

Priborostroyeniye. Resp. mezhved. nauch.-tekhn. sb. (Instrument Making. Republic Interdepartmental Scientific and Technical Collection), No 12, 1972, pp 10-14 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L228)

Translation: A study was made of the procedure for calculating the convective diffusion and basic characteristics of chemotron converters with noncoaxial cathode cylinders. The theoretical analysis consists in solving the general equations of convective diffusion in the bicylindrical coordinate system. The effect of the noncoaxial nature of the cathode cylinders on the current density distribution and the conversion characteristics of the instruments was clarified.

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- 15 -

MARAKUSHEV, A. A.

Geology

THE MIGRATION ABILITY AND GEMMEFORMAL SYSTEMATICS OF METALS

[Article by Doctor of Geological and Mineralogical Sciences, A. A. Marakushev, Vostochno-Akademi, Nauk SSSR, Moscow, Vol. 1, No. 1, 1972, pp. 40-51]

ISSN 0013-788X/72/0013-0040\$07.50/0

The behavior of metals in geological processes of various types and also their distribution in the deep zones of the earth (geophores) are determined to a great extent by the geochemical activity of metals to oxygen and sulfur. At the same time, one of the founders of modern geochemistry, V. M. Gol'dsheid, put that property also by the ability of metals to form stable geochemical systems of metals, which were supplied by him into three groups: lithophilic, chalcophilic, and siderophilic. In that case it was assumed that lithophilic elements with a high chemical affinity to oxygen and relatively low density (alkali and alkali earth metals, silicon, aluminum, and boron) are typical of the outer parts of the earth, where they enter mainly the composition of oxygen compounds -- the silicates. With the transition to the deep geophores they must be displaced by denser chalcophilic metals (iron, copper, zinc, cadmium, lead, arsenic, antimony, bismuth, etc.) with a preference within the term of separation, and also siderophilic elements (iron, nickel, cobalt, molybdenum, carbon, platinum, etc.) with their tendencies to segregation in the metallic (native) state. That generalization was made by V. M. Gol'dsheid on the basis of empirical laws of the behavior of elements in the earth's crust, consideration of data obtained in the study of meteorites, and some analogies with the metamorphic processes.

In recent years, thanks to successes of experimental investigation of the thermodynamic properties of compounds of metals, it is becoming possible to calculate the values of their chemical affinity toward various elements and to elaborate the geochemical systematics of elements on a new quantitative basis.

Of special importance is calculation of the chemical affinity of metals to sulfur and oxygen bonded in the structures

- 60 -

USSR

UDC 616.61-002.151

GRINSHPUN, O. Ya., Col Med Serv, Candidate of Medical Sciences;
VAS'KOV, V. G., Lt Col Med Serv; MAKSIMOV, Ye. V., Lt Col Med
Serv; ANDRONOV, A. S., Capt Med Serv; ~~MARAKUSHEV, M. I.~~;
KHOMENKO, L. M.; TSEY, A. L.

"Some Clinical Data on Hemorrhagic Nephrosonephritis"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 8, Sep 71, pp 50-51

Abstract: Observation of 17 cases of hemorrhagic nephrosonephritis (HNN) sporadically occurring in the Transcarpathian Region revealed a typical progress of this disease through three stages. In the first stage, lasting 2-4 days, body temperature rapidly rose to 38-40°C, the patients complained about headache, pain in muscles and joints, and general weakness: they were photophobic, had cutaneous hyperemia in the face and upper trunk, and some developed dry noises in their lungs. An incorrect diagnosis was made in all cases, partly because this disease is very rare in Transcarpathia. In the second stage, lasting 4-8 days, clinical signs characteristic of HNN developed

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GRINSHPUN, O. Ya., et al, Voyenno-Meditsinskiy Zhurnal, No 8, Sep 71, pp 50-51

in all patients, and the proper diagnosis was established in all. Only four patients had hemorrhagic conjunctiva or nosebleed. All suffered from gastrointestinal disorders and from oliguria (down to 200 ml per day) with hematuria and proteinuria. The third stage -- convalescence -- began on the 9th - 11th day with the onset of diuresis, which soon reached 6-8 liters per day. Hemorrhages, vomiting, fever, and other discomfort subsided, and the patients regained appetite and thirst. In the initial days of polyuria, concentration of gamma globulins in the protein fraction increased to 27.9%, while plasma potassium decreased to 9.3 mg% and plasma calcium to 6.8 mg%. The patients lost 5-8 kg body weight. The stage of convalescence lasted 2-3 weeks. The treatment was symptomatic, and all patients recovered without complications.

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USSR

UDC 612.82:612.26.014.45

SUVOROV, G. A., and KARAKUSHKIN, L. A., Sanitary Hygiene Medical Institute, Leningrad

"Effect of Pulsed Noise on Tissue Respiration in the Cerebral Cortex"

Moscow, Gigiyena i Sanitariya, No 7, Jul 70, pp 105-106

Abstract: Rats were exposed to steady and pulsed noise for various periods of time in order to study tissue respiration in the cerebral cortex. Steady noise inhibited oxidative processes, whereas pulsed noise intensified them. Exposure to steady noise for 3 hours reduced oxygen consumption in the temporal and parietal lobes by 9% and in the occipital lobe by 7%. Lengthening the exposure to 6 hours resulted in a further decrease in all of the lobes. Three hours' exposure to pulsed noise, on the other hand, increased oxygen consumption in the temporal and parietal lobes by 15% and in the occipital lobe by 12%. Lengthening the exposure produced a further but insignificant increase. The oxidative processes were virtually normal in all portions of the brain after 30 days' exposure to steady noise but not after the same length of exposure to pulsed noise.

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USSR

UDC 614.777-078:576.851.316

MARAMOVICH, A. S., SARDAR, Ye. A., and VEYDE, A. A., Irkutsk Scientific
Research Antiplague Institute of Siberia and the Far East

"Possibility of Utilizing Moor Tampons to Isolate Cholera Vibrios from
Water"

Moscow, Laboratornoye Delo, No 8, 71, pp 497-499

Abstract: The possibility of utilizing Moor tampons to detect the presence of cholera vibrios was tested in waters of the Irkutskaya Oblast irrigation system. The tampons (each a metal rod loosely wound with 15-20 layers of gauze forming a ball 15-20 cm in diameter, wrapped in paper, and sterilized) were suspended by a cord in the water to a depth of 10-15 cm, close to a metal net installed to prevent the entry of large particles into the water system. The tampons were left in the water for 24-48 hours, then taken to the laboratory, where their contents were squeezed into sterilized metal jars and alkalized to pH 8.0. The alkalized liquid was poured into a half-liter vessel, 40 ml of basic peptone was added, and the mixture was left standing at 37°C for 5-6 hours. The investigations established the presence of El Tor cholera vibrios with typical morphological, cultural, and biological properties, although water samples previously obtained from the same

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USSR

MARAMOVICH, A. S., et al., Laboratornoye Delo, No 8, 71, pp 497-499

waters without the use of tampons produced negative results. The tampon method can be used also in isolating cholera vibrios from waters of rivers, wastewaters of populated areas, and even homes and hostels.

2/2

- 9 -

USSR

UDC 576.851.31.06

MARAMOVICH, A. S., VEYDE, A. A., SARDAR, Ye. A., MAKAROVA, A. P., SHVETSOVA, R. I., and URBANOVICH, L. Ya., Irkutsk Antiplague Institute of Siberia and the Far East

"Determination of the Cholerogetic Properties of Vibrios in Newborn Rabbits"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972, pp 59-64

Abstract: Study of 65 vibrio strains from different sources in newborn rabbits (considered a suitable model for testing the pathogenicity of a given cholera vibrio strain for man) showed that all the cholera strains could produce the typical syndrome of cholerogeticity, whereas the nonagglutinable vibrios could not do so except for occasional strains (Heiberg's group 1) isolated from human beings in cholera foci. The main signs of cholerogeticity are marked dilatation of the lumen of the large intestine filled with a light transparent fluid and marked hyperemia of the small intestine containing a viscous yellow fluid throughout. Cholerogeticity was regularly observed after intra-intestinal infection of 9-to 12-day-old rabbits with doses ranging from 10^3 to 10^5 vibrios/100 g of weight. Smaller doses generally failed to elicit any reaction.

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- 8 -